



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,479	01/11/2001	Kari Peltonen	30-537	8773

7590 09/13/2002

Nixon & Vanderhye P.C.
1100 N. Glebe Rd., 8th Floor
Arlington, VA 22201

EXAMINER

OCAMPO, MARIANNE S

ART UNIT	PAPER NUMBER
----------	--------------

1723

DATE MAILED: 09/13/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/757,479

Applicant(s)

PELTONEN ET AL.

Examiner

Marianne S. Ocampo

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-32, 34-50, 52 and 53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-32, 34-50, 52 and 53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the EP patent number 060150 cited in the amended paragraph filed on 6-21-02, should be changed to “**664 150**”. EP patent application 9100973 which is corrected to EP patent application 95100973, cited in the original specification has been published as EP 664 150 not as EP 060150 as in the amended paragraph. Furthermore, the IDS (Paper no.8) filed on 6-21-02 also confirmed that EP patent application 95100973 has been published as EP 664 150.

Appropriate correction is required.

Claim Objections

2. Applicant is advised that should claim 37 be found allowable, claims 38 and 39 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two or more claims in an application are duplicates or **else are so close in content that they both cover the same thing**, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). In this instance, claims 37 - 39 effectively claim the same invention despite a difference in the

wording/definition of a mixer casing and the mixing blades leaving the "rotor center open" (i.e open center space).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 32, 40 and 50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a). Claims 32 and 50 both recite the limitations "diffuser-like outlet pipe" in line 2 and "the flow of mixed pulp" in line 2. There is insufficient antecedent basis for the limitations in the claims. The term "diffuser-like" renders the claims indefinite because the claims include elements not actually disclosed (those encompassed by "diffuser-like"), thereby rendering the scope of the claims unascertainable. See MPEP § 2173.05(d). Is the claims adding the limitation that the materials being mixed in the apparatus is pulp?

b). Claim 40, as a dependent claim of claim 38, recites the limitation "said interior space of said mixer casing" in line 2. There is insufficient antecedent basis for the limitation in the claim, since claim 38 has not yet mentioned an interior space prior to its recitation in claim 40.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 24 – 26, 34 – 43 and 52 – 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein (US 1,156,409) in view of Cook (US 5,800,058).

7. Concerning claim 24, Klein discloses an apparatus for mixing a fluid medium (cold water) with a solids-liquid suspension (molasses and hot water), comprising a mixer casing (1, 2, 3) having an inlet (5) attached by a flange to inlet piping and an outlet (25) and defining a flow axis between the inlet and the outlet, a conduit (5, 11, 12) for feeding the fluid medium into the casing or inlet piping and at least one rotor (13) freely rotatable mounted in the casing (1) for free rotation (i.e. without a driving means such as a driving motor) about an axis of rotation which is transverse to the flow axis, wherein the rotor (13) has a center, a shaft (13) mounted on bearings in the casing (1) and blades (15), as in figs. 1 – 2 and pages 1 – 2 of the specification. Klein fails to disclose the blades leaving the center of the rotor open (to flow). Cook teaches a

mixing rotor (vortex elimination device) capable of use with a mixer casing such as the one taught by Klein, having a center and blades (14) which leave the rotor center open, as in fig. 9. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the rotor and blades of the apparatus of Klein by adding the embodiment taught by Cook, in order to provide an alternative and improved design for a mixing apparatus which not only allows faster and more efficient mixing of fluids (with a solid-liquid suspension) in the casing, but also prevents the uneven mixing of fluids (and the suspension) due to some of the fluid and suspension mixture being attached or caught in the center of the rotor and in between blades of the rotor.

8. With regards to claim 25, Klein further discloses the inlet being provided with at least one throttling member in the form of spout section/conduit 18 which is shaped to provide a throttling (by decreasing the area for flow into the casing) effect or throttles (decreases) the flow of fluid into the casing (1, 2), as in fig. 1.

9. Regarding claim 26, Klein discloses the throttling member (18) comprising at least one rib (staggered wall portion) mounted in the vicinity of the inlet (adjacent screen 22) in the casing (1) for causing the mass center of the flow of fluid entering the casing to deviate from flow centered on said axis of rotation, as in fig. 1.

10. With respect to claim 34, Klein also discloses the inlet (formed by pipe 5) and the outlet (formed by conduit 25) being disposed with respect to each other so that the direction of flow of fluid changes at most about 100 degrees from the inlet to the outlet, as in fig. 1.

11. Concerning claim 35, Klein discloses at least a portion (head or upper end) of the outlet (25) being tangential to the direction of rotation of the rotor (13), as in fig. 1.

12. With regards to claim 36, Klein further discloses the conduit (5) feeding the fluid medium (from piping 11) and a solids-liquid suspension (molasses plus hot water, from piping 6 & 7 and 8) into the casing (1) and the rotor (13) including mixing blades (15) contacted by the fluid medium and solids-liquid suspension introduced by the conduit so that the rotation of the mixing rotor is effected, as in figs. 1 – 2. With the combination of the teachings of Cook with that of Klein, the rotor with mixing blades (14) of Cook would be substituted for the mixing rotor (13) having blades (15), and the same effect of the fluid and the solid-liquid suspension hitting the blades (14) of the rotor of Cook would effect the rotation of the mixing rotor.

13. Regarding claims 37 - 39, Klein discloses an apparatus for mixing a fluid medium (cold water) with a solids-liquid suspension (hot water plus molasses), comprising a mixing casing (1, 2, 3) defining an interior space and a flow axis and having an inlet (5, 18) for introducing a mass flow of material which includes the solids-liquid suspension into the interior space or said mixer casing (defined by the chamber 2) and an outlet (defined by conduit 25) for

discharging a mixture of the fluid medium and the solids-liquid suspension from the mixer casing (1, 3), a conduit (5, 11, 18) for feeding the fluid medium into contact with the solids-liquid suspension, a mixing rotor (13) freely rotatably mounted in the casing for free rotation about an axis of rotation, which is transverse to an axis of flow leading from the inlet (18) to the outlet (25) and the mixing rotor having a center, a shaft (13) mounted on bearings in the casing and blades (15) which are positioned for contact with the fluid medium and solids-liquid suspension introduced into the mixer casing (1) to thereby responsively cause the mixing rotor (13, 14) to rotate and mix the fluid medium with the solids-liquid suspension, as in fig. 1 and pages 1 – 2. Klein fails to disclose the blades leaving the rotor center open (to flow). Cook teaches a mixing rotor (vortex elimination device) capable of use with a mixer casing such as the one taught by Klein, having a center and blades (14) which leave the rotor center open (in other words, the blades establishing an open center space of the mixing rotor), as in fig. 9. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the rotor and blades of the apparatus of Klein by adding the embodiment taught by Cook, in order to provide an alternative and improved design for a mixing apparatus which not only allows faster and more efficient mixing of fluids (with a solid-liquid suspension) in the casing, but also prevents the uneven mixing of fluids (and the suspension) due to some of the fluid and suspension mixture being attached or caught in the center of the rotor and in between blades of the rotor.

14. With regards to claim 40, Klein further discloses the conduit (18) introducing the fluid medium with the solids-liquid suspension directly into the interior space of the mixer casing, as in fig. 1.

15. Concerning claim 41, Klein also discloses the inlet including inlet piping (18) for the mass flow of material and the conduit (11, 5) introduces the fluid medium into the inlet piping (18), as in fig. 1.

16. With respect to claim 42, Klein further discloses the inlet being provided with at least one throttling member in the form of spout section (19) of conduit 18 which is shaped to provide a throttling (by decreasing the area for flow into the casing) effect or throttles (decreases) the flow of fluid into the casing (1, 2), as in fig. 1.

17. Regarding claim 43, Klein discloses the throttling member (19, 18) comprising at least one rib (staggered wall portion) mounted in the vicinity of the inlet (adjacent screen 22) in the casing (1) for causing the mass center of the flow of fluid entering the casing to deviate from flow centered on said axis of rotation, as in fig. 1.

18. With respect to claim 52, Klein also discloses the inlet (formed by pipe 5) and the outlet (formed by conduit 25) being disposed with respect to each other so that the direction of flow of fluid changes at most about 100 degrees from the inlet to the outlet, as in fig. 1.

19. Concerning claim 53, Klein discloses at least a portion (head or upper end) of the outlet (25) being tangential to the direction of rotation of the rotor (13), as in fig. 1.

20. Claims 27 – 32 and 44 – 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein and Cook, as applied to claims 24 and 37 – 39, respectively above, and further in view of Schafhaus (US 431,624).

21. With regards to claims 27, 44 and 46, Klein as modified by Cook, further teach the inlet including inlet piping (5, 18) for the mass flow of material, but fails to teach the throttling member comprising a valve mounted in the vicinity of the inlet for causing the mass center of the mass flow of material entering the casing to deviate from flow centered on the axis of rotation. Schafhaus teaches a mixing apparatus having a throttling member comprising a (slide) valve (C¹) mounted in the vicinity of an inlet of the mixer casing (A, E) for causing the mass center of a mass flow of material entering the casing to deviate from flow centered on the axis of rotation, as in fig. 2. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the throttling member of the mixing apparatus of Klein as modified by Cook, by adding the embodiment taught by Schafhaus, in order to provide an alternative and improved throttling member, which not only effectively provide the throttling effect required, but also provide a means for regulating and varying (the amount of) the throttling effect as desired in each particular mixing application.

22. Concerning claims 28 and 45, Schafhaus further teach the valve (C^1) comprising a part of the casing (as in the hopper attached to the mixing casing portion A) or attached to an inlet flange (C) of the casing or comprising part of the inlet piping, as in fig. 2. The same motivation applied in the preceding claims is applied here.

23. With respect to claim 29 and 47, Klein as modified by Cook, fails to teach at least one stationary mixing member disposed within the casing. Schafhaus further teaches at least one stationary mixing member (f) disposed within a portion of the casing (E), as in fig. 2. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Klein as modified by Cook, by adding the embodiment taught by Schafhaus, in order to provide an additional mixing element which provides deflection towards the mixing rotors in the casing, thereby providing a more effective and reliable mixing of the ingredients (fluid and solids-liquid suspension) and prevent sticking of some of the mixture on the walls of the casing (see page 1 of Schafhaus).

24. Regarding claims 30 and 48, Klein as modified by Cook and Schafhaus, further teach the stationary mixing member (f) being mounted at least 90 degrees from the outlet of the casing portion (E) opposite the direction of the rotation of the rotors (F^1 and F^2) therein, as in fig. 2. The same motivation used in preceding claims 29 and 47 is applied here.

25. Concerning claims 31 and 49, Klein as modified by Cook and Schafhaus, further teach the stationary mixing member (f) comprising a rib attached to a wall (F) of the casing (E), as in fig. 2. The same motivation used in preceding claims 29 and 47 is applied here.

26. With respect to claims 32 and 50, Klein as modified by Cook, fails to teach the outlet including a diffuser-like outlet pipe which recovers the dynamic pressure from the flow of mixed pulp (The examiner considered the term "mixed pulp" to be generic and to be any combination of the fluid medium and the solids-liquid suspension, and the term "diffuser like outlet pipe" to be a (outlet) pipe capable of producing a diffused spray of the discharged fluid from the casing). Schafhaus further teaches the apparatus having a diffuser-like outlet pipe (F) which is able to recover dynamic pressure from the flow of mixed "pulp"/suspension and fluid in the casing (E), as in fig. 2 and page 1. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the outlet pipe of the apparatus of Klein as modified by Cook, by adding the embodiment taught by Schafhaus, in order to provide an alternative design for the outlet of the mixing apparatus which provides an effective and faster discharging of the mixture/mixed pulp from the mixing apparatus.

Response to Amendments and Arguments

27. Applicant's arguments with respect to claims 24 – 32, 34 – 50 and 52 - 53 have been considered but are moot in view of the new grounds of rejections set forth in this Office action.

This action is non-final.

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 1,827,316 (Haynsworth), 1,633,609 (Schmidt), 3,251,540 (Kinsworthy), 3,325,089 (Vogler), 5,451,138 (Istorik et al.) and 3,970,411 (Wallman).

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (703) 305-1039. The examiner can normally be reached on Mondays to Fridays from 8:00 A.M. to 4:30 P.M..

30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Art Unit: 1723

31. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

msd

M.S.O.

September 6, 2002

M. Savage
MATTHEW O. SAVAGE
PRIMARY EXAMINER